#3 INSITE, INtegrated Support for Impacted air-Traffic Environments

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INtegrated Support for Impacted air-Traffic Environments (INSITE) is a web-based prototype application developed for use in the convective weather forecast process. The tool provides guidance to forecasters by providing detailed information on the potential impacts of forecast convective weather to en-route aviation operations. INSITE incorporates weather information from observations as well as from five forecast products (CIWS, HRRR, LAMP, SREF, and CCFP). In addition to displaying the original weather products, a constraint field derived from each product using a combination of weather and traffic density information is provided, which highlights potential impacts to air traffic based upon the forecast weather conditions. Further, INSITE provides a weighted average of the 5 constraint forecasts, considered a 'synthesis' of the products. Each constraint forecast includes a measure of confidence of that forecast, or in the case of the synthesis, a measure of the consistency between the 5 member forecasts. Another key feature of INSITE is that the user can interact with the application to outline a region of interest to determine the severity of constraint within that region. More detailed constraint information can be viewed specific to this region with respect to airways or Air Route Traffic Control Centers (ARTCCs) that intersect it.

INSITE was made available to Aviation Weather Center (AWC) forecasters, the National Aviation Meteorologists at the Air Traffic Control System Command Center (ATCSCC), and local Weather forecast Offices (WFOs) and Center Weather Service Units (CWSUs) in the Northeastern US for evaluation during the 2013 convective season. INSITE was also evaluated during the 2013 Aviation Weather Testbed. Further enhancements to INSITE are currently being implemented based upon user feedback, with a new version available to the same user base starting June 2014.

INSITE extends the typical use of environmental prediction guidance by combining it with historical air traffic data to determine potential impacts to aviation operations. It is aligned with several of the service concepts that are part of the NWS vision for a Weather Ready Nation, including:

- Supporting a shift from product focus to product interpretation and consultation
- Communicating on-demand forecast confidence information
- Delivering information in a way that conveys potential impacts and supports good decision-making and planning.

INSITE: http://esrl.noaa.gov/fiqas/tech/impact/insite/